

## TABLE OF CONTENTS

Vol. 65 Nos. 1-2 1996/1997

### THE DYNAMICAL BEHAVIOUR OF OUR PLANETARY SYSTEM

*Invited papers presented at the  
Fourth Alexander von Humboldt Colloquium on Celestial Mechanics*

#### Editorial note

A. NEISHTADT / Scattering by resonances	1-20
S. ICHTIAROGLOU / Non-integrability in Hamiltonian mechanics	21-31
G. CONTOPOULOS and E. GROUSOUZAKOU // Regular and irregular periodic orbits	33-56
C. SIOPIS, H.E. KANDRUP, G. CONTOPOULOS and R. DVORAK / Universal properties of escape in dynamical systems	57-68
M. ŠIDLICHOVSKÝ / Mapping and dynamical systems	69-84
K. WODNAR / A new fast Fourier method for evaluating Fourier spectra at arbitrary frequencies	85-94
P. BRETAGNON / On the use of analytical theories in the calculation of precession-nutation	95-106
A. MORBIDELLI and M. GUZZO / The Nekhoroshev theorem and the asteroid belt dynamical system	107-136
M. ŠIDLICHOVSKÝ and D. NESVORNÝ / Frequency modified Fourier transform and its application to asteroids	137-148
B. ÉRDI / The Trojan problem	149-164
Ch. FROESCHLÉ / Dynamical transport to planet-crossing orbits	165-173
M. MOONS / Review of the dynamics in the Kirkwood gaps	175-204
V. SZEBEHELY / Open problems on the eve of the next millennium	205-211
H. EICHHORN / Limit of comprehension, reference frames and general relativity	213-222

*Vol. 65 No. 3 1996/1997*

CH. SKOKOS, G. CONTOPOULOS and C. POLYMILIS / Structures in the Phase Space of a Four Dimensional Symplectic Map	223-251
B. ISHWAR / Non-Linear Stability in the Generalized Restricted Three-Body Problem	253-289
P.V. SUBBA RAO and RAM KRISHAN SHARMA / Effect of Oblateness on the Non-Linear Stability of $L_4$ in the Restricted Three-Body Problem	291-312
R.A. WERNER and D.J. SCHEERES / Exterior Gravitation of a Polyhedron Derived and Compared with Harmonic and Mascon Gravitation Representations of Asteroid 4769 Castalia	313-344

*Vol. 65 No. 4 1997*

S. BREITER / On the Numerical Transformation of Variables in Perturbation Theory	345-354
P. MICHEL and G.B. VALSECCHI / Numerical Experiments on the Efficiency of Second-Order Mixed-Variable Symplectic Integrators for N-Body Problems	355-371
R.M. SHOUCRI / Elliptical Orbit with Non-Central Force Field in Celestial Mechanics	373-388
R.A. SERAFIN / On Solving Kepler's Equation for Nearly Parabolic Orbits	389-398
V.B. MAGALINSKY and T.K. CHATTERJEE / Extension of the Kepler Problem Towards Minimization of Energy and Gravity Softening	399-405
R.R. CORDEIRO, R.S. GOMES and R. VIEIRA MARTINS / A Mapping for Nonconservative Systems	407-419
S. FERRAZ-MELLO / A Symplectic Mapping Approach to the Study of the Stochasticity in Asteroidal Resonances	421-437
V. DEHANT and N. CAPITAINE / On the Precession Constant: Values and Constraints on the Dynamical Ellipticity: Link with Oppolzer Terms and Tilt-Over-Mode	439-458
Book Review E.M. Soop, <i>Handbook of Geostationary Orbits</i> (B.G. WILLIAMS)	459-460
Instructions to Authors	461-462
Volume Contents	463-464

